PATENT CLAIMS

1. Camera arrangement, in particular for use in a motor vehicle, including

- a printed circuit board with an image sensor and an objective lens carrier, and
- an objective lens for projecting an image onto the image sensor,
- the objective lens being connected by connecting means to the objective lens carrier,

characterised in that the connecting means is one or more ball segment-shaped housing sections which are provided terminally of the objective lens and which are held in a cylindrical bore of the objective lens carrier, the connecting means being suitable for sliding the objective lens relative to the image sensor as well as pivoting it.

2. Camera arrangement according to claim 1, characterised in that the ball segment-shaped housing section and the cylindrical bore are mounted so as to be slidable and pivotable relative to each other by a loose fit.

3. Camera arrangement according to claim 1, characterised in that the objective lens, the printed circuit board with the image sensor and the objective lens carrier (11) are accommodated in a housing.

4. Camera arrangement according to claim 1, characterised in that the ball segment-shaped section is injection moulded integrally on the objective lens or glued to the objective lens (5).

5. Camera arrangement according to claim 1, characterised in that the objective lens carrier (11) is made of a material which is permeable to laser radiation.

6. Method for the adjustment of a camera arrangement comprising:

a) introducing an objective lens into the objective lens carrier in a predetermined initial position W_1;

b) reading out information from an image sensor and determining a contrast value in a predetermined image region, determining a first weighted average of contrast values and storing the weighted average linked with the respective distance position W_n in an evaluating device;

c) sliding the objective lens by a distance section Δz in the direction of the image sensor;

d) repeating steps b) and c) until the ball segment-shaped housing section reaches a predetermined end position W_{end};

e) sliding the objective lens into the distance position W_{max} in which the value of the stored weighted averages is maximal;

f) pivoting the objective lens into a predetermined first initial pivot position $S_{\alpha 1}$;

g) reading out the image sensor information and determining the contrast values in the predetermined image regions, determining a second weighted average of the contrast values and storing the second weighted average linked with the respective pivot position $S_{\alpha n}$ in an evaluating device;

h) pivoting the objective lens by a pivot angle $\Delta\alpha$ in a predetermined first pivot direction *a*;

i) repeating steps g) and h) until a predetermined first end position $S_{\alpha end}$ is reached;

j) pivoting the objective lens into the pivot position $S_{\alpha max}$ in which the value of the stored second weighted averages is maximal;

k) connecting the ball segment-shaped housing section to the cylindrical bore.

7. Method for the adjustment of a camera arrangement according to claim 6, further comprising:

l) pivoting the objective lens (5) in a pivot direction b orthogonal to the pivot direction *a* into a second initial pivot position $S_{\beta 1}$;

m) reading out the image sensor information and determining the contrast values in predetermined image regions, determining a third weighted average of the contrast values and storing the weighted average linked with the respective pivot position $S_{\beta n}$ in the evaluating device;

n) pivoting the objective lens by a pivot angle $\Delta\beta$ in the direction opposite the second pivot direction b;

o) repeating steps m) and n) until a predetermined second end position $S_{\beta end}$ is reached;

p) pivoting the objective lens into the pivot position $S_{\beta max}$ in which the value of the pre-stored weighted averages is maximal.

8. Method for the adjustment of a camera arrangement according to claim 6, characterised in that the predetermined image regions are at least the picture elements which lie on a radius R = ¼ * the width of the image about the image center to be expected.

9. Method for the adjustment of a camera arrangement according to claim 6, characterised in that the contrast values are determined by a modulation transfer function.

10. Method for the adjustment of a camera arrangement according to claim 6, characterised in that the ball segment-shaped housing section and the cylindrical bore are connected to each other by laser welding or gluing.

11. Method for the adjustment of a camera arrangement according to claim 6, characterised in that the measured contrast values are contrast values independent of each other for the colour values red, green and blue.

12. Method for the adjustment of a camera arrangement according to claim 6, characterised in that the colour values are weighted with a factor, the green contrast values being more heavily weighted than the red contrast values and the red contrast values more heavily than the blue contrast values.